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FRONT COVER: "Pour la Plage,"
by Isobel McLellan (Head Office)

OUR CONTRIBUTORS



P. C. Allen is the Fibres Group Director of I.C.I. and a noted railway enthusiast. His job takes him abroad from time to time, and wherever he goes he uses his off-duty moments to take a look at local railways. He has written several books on the subject, the latest being "On the Old Lines" (Cleaver-Hume Press).



Sadie Blunt is a secretary at British Visqueen Ltd. A Scot, she once worked as a local news reporter and during the war served as a WAAF in Bomber Command. She is married and has two sons of 11 and 14.



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I.C.I.'s New Anaesthetic

By a special correspondent

Eight years ago Imperial Chemical Industries set out to meet the demand for a better anaesthetic. Working from their knowledge of fluorine compounds used as refrigerants, General Chemicals Division research chemists tailored a new compound for the job. The outcome, after extensive trials, was 'Fluothane,' thought to be the nearest approach yet to the ideal anaesthetic.

LAST autumn I.C.I. introduced a new anaesthetic called 'Fluothane.' Already more than 100,000 routine anaesthetics have been given with it, and many thousands of cases have been critically reported on in the medical press. Most of these reports are favourable and justify the claim that, more than any other drug so far discovered, it is nearest to the ideal anaesthetic.

'Fluothane' is a sweet-smelling, volatile liquid which is administered, like ether, as a vapour well diluted with air or oxygen. A concentration of about 1.5% is sufficient to maintain anaesthesia. To be anaesthetised with 'Fluothane' is not unpleasant, but patients are usually put to sleep first with a shot in the arm.

So much for an introduction to 'Fluothane.' But before writing about the discovery, development and clinical trials of this drug, a few words about anaesthesia and why there is a demand for new anaesthetics are necessary.

Anaesthesia occurs under man's earliest recorded ideas, as when, in the Creation story in Genesis, Adam is put into a deep sleep for the removal of his rib. But it was not until just over a hundred years ago that effective, practical anaesthesia became a reality. By the 1940s it was possible to provide adequate anaesthesia for nearly all surgical procedures. Why then was there still a demand for improved anaesthetics?

In the first place, all three original pillars of anaesthesia—nitrous oxide, chloroform and ether—have major disadvantages.

Nitrous oxide (dentists' gas) is, by itself, unsuitable for operations which last more than a few minutes. Chloroform is liable to affect heart and liver unfavourably and is now very little used. Ether is inflammable and forms very explosive mixtures with air and oxygen. Expensive precautions have to be taken to avoid this risk, as these mixtures can be ignited by sparks from the static electric charge which forms on non-conducting theatre equipment. Moreover, when inflammable anaesthetics are used the surgeon may be denied the use of procedures which involve heat, such as cautery and diathermy.*

In the last 25 years three new volatile anaesthetics have come into use: cyclopropane and divinyl ether (both of which are inflammable), and I.C.I.'s 'Trilene.' Although a useful anaesthetic, 'Trilene' needs help from relaxing agents when used for long operations. When given in concentrations short of those necessary to produce unconsciousness it still provides a remarkable degree of insensitivity to pain. This property is very valuable during midwifery and in some minor operations.

Most of us, naturally, think of surgical operations from the patient's point of view, but it is worth remembering that the patient is only one of three who make demands on the anaesthetic. The patient would be satisfied with a pleasant and rapid descent into

*The application of electric current to produce heat in the deeper tissues of the body.

unconsciousness and a recovery free from unpleasantness, such as vomiting.

For the surgeon and anaesthetist this is only a beginning. Among the surgeon's chief requirements are relaxation of the patient's muscles and the least bleeding. If muscles become rigid and contracted as soon as touched, the surgeon will find his manipulations difficult, if not impossible. It was a great virtue of ether and chloroform that they gave good muscular relaxation; but, as we have seen, both have disadvantages. The surgeon will be very dissatisfied if the anaesthetic increases the amount of blood which oozes from cut surfaces, as this obscures the field of operation.

Modern Techniques

Since the last war an anaesthetic technique has been developed by which separate drugs are given to produce unconsciousness and relaxation. For example, the patient may be anaesthetised by a continuous drip of barbiturate into a vein and relaxation achieved by injection of curare. Curare is a purified form of the poison used by South American natives on their arrows. It paralyses the muscles. This technique was a most important advance in anaesthesia and is probably the most important alternative to 'Fluothane.' It has some disadvantages. It is a difficult technique, liable to cause a lot of bleeding, and sometimes the patient is very slow to recover. It is not suitable for all types of operation.

Rapid recovery by the patient is very important to the anaesthetist. The patient need not quickly become conscious and coherent, but his reflexes—such as coughing up any foreign body which gets into the windpipe—should return quickly. When these protective reflexes have returned the patient can, as anaesthetists put it, look after himself.

Rapid Recovery

There are many ways in which the anaesthetic may affect the chances of a favourable outcome. It goes without saying that it should interfere as little as possible with the normal working of the body and should not adversely affect any of the organs. The anaesthetic may protect against or it may aggravate the shocks and stresses which the body suffers during an operation and often has an important effect on the patient's condition at the end of it. Anticipating the remarks on clinical trials, we may note that the general



Pharmaceuticals Division's new laboratories at Alderley Park, Cheshire, will enable future work on such drugs as 'Fluothane' to go ahead quickly under ideal conditions

experience with 'Fluothane' anaesthesia has been that patients leave the theatre in exceptionally good shape.

Although it was possible by various combinations of drugs to satisfy some of these demands, the need was obvious for still better and perhaps simpler techniques. This led to the formation, by the Medical Research Council, of a sub-committee to encourage and assist in the search for a safe, effective, non-inflammable anaesthetic.

I.C.I. has had an interest in anaesthesia for some time, as manufacturer and distributor of 'Trilene,' of cyclopropane, and of the barbiturate 'Kemithal.' It was therefore to be expected that I.C.I. should interest itself in the search for new anaesthetics.

There was one group of compounds which did seem to have many of the properties which are desirable in an anaesthetic. These were the chlori-

nated fluoroparaffins, which include the 'Arcton' range of compounds, which are made in quantity by General Chemicals Division for use as refrigerants and as intermediates for plastics. These compounds owe their suitability as refrigerants mainly to their volatility, stability, low toxicity and non-inflammability, properties which are desirable in an anaesthetic.

In the U.S.A. many such compounds had been tested as anaesthetics on animals, but most had caused undesirable and dangerous side effects such as very low blood pressure or irregularities in heart action, and probably for that reason none had been tried on human subjects.

When Dr. J. Ferguson became Research Director of General Chemicals Division eight years ago, at a time when there was renewed interest in anaesthetics at

Pharmaceuticals Division, a decisive step was taken. Dr. Ferguson appreciated the possibility of exploiting both our knowledge of fluorine compounds and his own contributions to the theory of biological action. In 1939, when working on the control of grain weevils, Dr. Ferguson had made a fundamental advance in the understanding of narcosis, of which anaesthesia is one aspect, and he instituted a research programme with a non-inflammable anaesthetic as target.

Preparation of compounds in the anaesthetic projects began at Widnes Laboratory in 1951. Some compounds were chosen because they were readily available, but others on the basis of Dr. Ferguson's concepts and a knowledge of the influence of molecular structure on stability, toxicity and inflammability.

At Pharmaceuticals Division first tests were done with mice, and the few compounds which proved satisfactory were tried on rabbits. It became apparent that one of them, 2-bromo-2-chloro-1:1:1-trifluoroethane, a new compound specially made for testing as an anaesthetic, showed up very well. This compound was, much later, to be named 'Fluothane.'

A promising lead had emerged much sooner than is usual in biological work, but much remained to be done before tests in man could be contemplated. Over the next three years a few more candidate anaesthetics were given preliminary trials in mice, but most effort went into a thorough evaluating of the pharmacological properties of 'Fluothane,' using many species of animals, including cats, dogs, monkeys, and even the tortoise. This included a study of the behaviour of heart, lungs, liver and kidney under 'Fluothane' anaesthesia and a microscopic examination of some of the body tissues of animals which had been anaesthetised by 'Fluothane' many times.

A most encouraging picture emerged: anaesthesia was good and uncontrollable side effects were absent.

In the meantime the Physics Department at Widnes Laboratory had confirmed the important fact that 'Fluothane' was, as had been deduced from its structure, non-inflammable and non-explosive in

mixtures with air or oxygen in any proportions. At this stage, late in 1955, Pharmaceuticals Division felt able to recommend clinical trials, that is to say trials in the hospital operating theatre. Two independent clinical investigations were arranged. 'Fluothane' was offered to, and accepted by, the Anaesthetics Committee of the Medical Research Council, and the Departments of Anaesthesia in the University of Manchester also agreed to participate.

The first three anaesthetics with 'Fluothane' took place on 20th January 1956 in the Manchester Royal Infirmary. It was immediately observed that the effective anaesthesia with rapid onset and recovery and freedom from unpleasant after-effects, which

had been apparent in animals, was a feature of 'Fluothane' anaesthesia in man also.

The promising outcome of the first clinical trials meant more work for both Pharmaceuticals and General Chemicals Divisions. Standards of purity and rigorous test schedules were drawn up by Pharmaceuticals Pharmacy Department and Widnes Laboratory Analytical Department in consultation. The effect of 'Fluothane' on all manner of plastics and metals had to be studied.

Special sales-packs were designed.

Unexpected difficulty was encountered in finding a bottle cap which would completely prevent loss of the expensive and very volatile 'Fluothane' and which would be unaffected by the wet 'Fluothane' which was liable to be poured back into the bottles in the theatre. This and many other snags were overcome. It was noticed at Widnes Laboratory that, when it stood in colourless bottles in sunlight, 'Fluothane' sometimes liberated bromine, which, of course, is toxic. Fortunately this can be completely prevented by adding a little thymol. As an added precaution amber bottles were chosen for 'Fluothane.'

Much more 'Fluothane' had to be manufactured for extended trials in this country, in Canada and in the U.S.A. In these early days supply was literally hand to mouth.

Expansion of output was quickly planned. 'Fluothane'

Life History of 'Fluothane'

June to Dec. 1950	Target definition
Dec. 1950 to Dec. 1952	Small-scale synthesis of selected compounds
Oct. 1952 to Dec. 1954	Biological screening tests
Jan. 1954 to Dec. 1955	Detailed biological and biochemical studies before clinical trial
Dec. 1955 to Feb. 1957	Increased output leading to plant scale manufacture
Jan. 1956 to present day	Clinical trials, further pharmacological work
Autumn 1957	General release

(Continued on page 155)

People and events . . .

What is a Scrip Issue?

WHEN the Company announced its final dividend, it also recommended that an extra £1 of stock be given to each stockholder for every £2 of stock that he holds on 30th May 1958. That is what is known as a "scrip issue." Both the dividend and the scrip issue are only recommended by the Board. They will be considered at a General Meeting on 15th May, and it is likely that they will be approved.

A scrip issue is sometimes described as a bonus or a free issue, and many people think that shareholders are getting something for nothing. In fact a scrip issue neither increases the value of the Company's assets nor increases its profitability. Take this example.

The capital of an imaginary XYZ company is £1000 divided into 1000 shares of £1 each. There are ten shareholders, and each holds 100 shares. Therefore each owns one-tenth of the business. If the capital of the XYZ company is increased by a scrip issue of one new share for every two shares held, i.e. similar to the proposed I.C.I. issue, the capital will be increased by 500 shares to 1500 shares.

* * *

This means that each shareholder will have 150 shares instead of 100. Even though he will have more shares, he will still only own one-tenth part of the business. Therefore his 150 shares must be worth only the same as the original 100 shares. If the shares were quoted on the Stock Exchange, theoretically the price of the shares would fall by one-third, so the value of 150 shares was the same as that of the original 100. (For practical purposes "shares" and "stock" are almost the same thing.)

The total amount of money to be distributed in dividends will not automatically be increased. If the XYZ company was paying a dividend of 15%, the total amount paid out in

dividend was £150. Unless the total amount paid out in dividend is increased, the £150 will now have to be divided over 1500 shares instead of 1000. Therefore the dividend will be reduced from 15% to 10%, and each shareholder will receive the same amount in dividend as previously, that is £15.

* * *

If a scrip issue has so little effect, what is its purpose? If a company prospers, it usually pays out only part of its profits in dividends. The remainder of the profits is ploughed back into the business and used to buy extra plant and machinery and so on. In this way the actual amount of capital employed in the business increases, whereas the nominal amount, as represented by the number of £1 shares or units of stock, remains unaltered. The object of a scrip issue is to increase the latter and so to close the gap between the total capital employed and the nominal capital.

To go back to the imaginary XYZ company, the shareholders originally put £1000 into the company. This company has been operating for five years. In addition to the amount paid in dividends it has made an additional £100 a year profit, which it has placed to reserve and used to buy additional plant and machinery. In consequence the reserves are now £500, which together with the original £1000 makes a total capital employed in the business of £1500. By making the scrip issue the reserves of £500 are added to the

nominal capital of £1000, making a total of £1500. The nominal capital has therefore been made the same as the capital employed in the business. In practice a company would never capitalise the whole of its reserves in this way, and so the nominal capital never catches up with the actual capital employed. Although reference has been made to reserves built up out of undistributed profits, this is only one way in which reserves are accumulated.

The present I.C.I. scrip issue, although on a much bigger scale, is similar to the example quoted.

Effect on Profit Sharing Scheme

THE I.C.I. scrip issue, if approved, will affect the Profit Sharing Scheme.

The Trustees are holding stock on behalf of employees and will receive £1 stock for every £2 stock held by them, so that the Trustees will hold half as much stock again for each employee.

After the scrip issue the value of £3 of I.C.I. stock will in theory be the same as that of £2 of stock previously. This will all happen before the stock for the bonus year 1957 is issued in 1958. For this reason it would be unfair to price the stock at 38s. 8d., which is the January 1958 price already announced. The price will therefore be reduced by one-third to 25s. 8d. In this way employees will get £3 of stock for every £2 of stock which they would have received had there been no scrip issue.

Employees will thus be credited with half as much stock again as would have been the case had there been no scrip issue, and the Company has decided that stock will be handed over when an employee has £40 of stock or more standing to his credit instead of the present £25.

Uranium Cans

THE picture below shows some of the corrosion-resistant sheaths or cans used to protect the uranium fuel of nuclear reactors.

They were all made by Metals Division and give an idea of how the design of these cans has evolved. The simple cylindrical aluminium can (1) dates from the early 1940s, when Britain could only speculate on possible reactor types. It was in fact used in the first Harwell reactor, GLEEP, where adequate cooling could be arranged without finning the cans.

* * *

Very soon came a range of aluminium cans with highly elaborate fins (2) brazed on by special Metals Division techniques. But for BEPO, the second Harwell reactor, only shallow-spiralled fins were needed (3).

Later, as heat transfer requirements advanced, the Windscale piles called for deep horizontally finned aluminium cans (4) and Calder Hall for transversely finned magnesium alloy sheathing (5). Future Central Electricity Authority stations may well use magnesium alloy cans of the kind illustrated at (6), which are remarkable examples of metallurgical and engineering skill. Zirconium and beryllium cans will be the next step.

WHAT THE PAPERS SAID

This is how some of the press received the news of I.C.I.'s final dividend of 8% and the proposed scrip issue:

The most cheering and significant news for investors since 1955.—*Sunday Dispatch*.

The I.C.I. dividend of 12% against 10% meets the best expectations, and the proposed 50% scrip issue is quite unexpected. Profits also fulfil the highest hopes.—*Observer*

All this makes merry reading to the stock exchange, who tend to look on I.C.I. as a barometer of British industrial prosperity.—*Daily Herald*

Brilliant results are reported by I.C.I. The group has defied all the adverse trends of the time.—*Manchester Guardian*.

The I.C.I. news is good, startlingly good.—*Financial Times*

Sir Alexander Fleck, Britain's Mister Chemical, boss of the impeccable I.C.I. emporium, will today cheer the chaps of Throgmorton Street. What a performance, and what a magnificent company.—*Daily Express*

First Aid

IT was the day of the "little Davids," said Sir Alexander Fleck when he presented the prizes at the I.C.I. First Aid Competition.

Randle Works, which won the trophy, is one of the smallest factories in General Chemicals Division—some 250 people are employed there. Their victory puts the Division at the top of the table, with five wins since the

Company First Aid Competition was started in 1932. Runners-up are Lime Division, with four firsts to their credit.

The other little giant was the team from Akers Research Laboratories, which came second—just three points behind Randle Works. This was only their second appearance at the finals day.

F.R.S. for Giberellic Acid Man

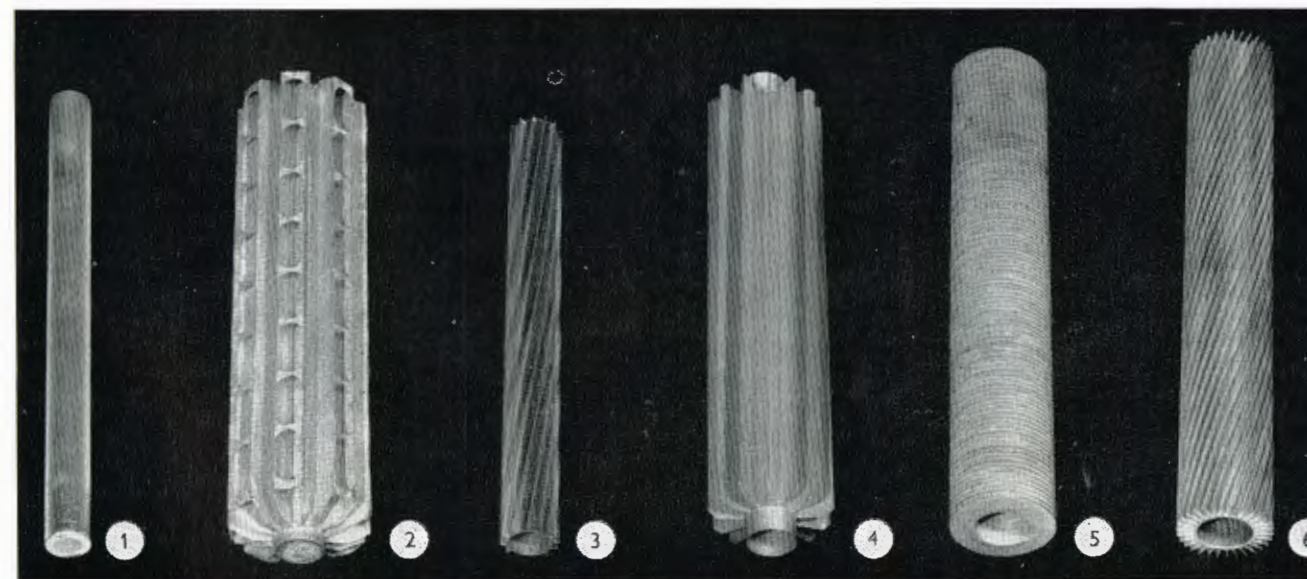
FOR the second year running the name of an I.C.I. scientist appears in the Royal Society's list of new fellows. Last year Dr. F. L.

Rose of Pharmaceuticals Division was elected. This year 47-year-old Dr. P. W. Brian, head of the Microbiology Department at Akers Research Laboratories, has the distinction of being the only industrial scientist among 25 new fellows.



Dr. Brian

Dr. Brian is a world authority in the increasingly important field of science known as microbiology—the study of micro-organisms and the chemicals they produce. Recently he has gained wide praise for his study of the new chemical giberellic acid. He initiated the work on *Giberella fujikuroi*,



Nuclear history in a nutshell: a selection of the uranium cans made by Metals Division since the 1940s

the fungus which causes the Japanese rice plant disease called "foolish seedling disease," which led to the first isolation of gibberellic acid.

He was educated at King Edward School, Birmingham, and King's College, Cambridge, and holds Ph.D. and D.Sc. degrees of this university. But for two years at Long Ashton Research Station his whole working career has been spent with I.C.I.

Like a number of his colleagues, Dr. Brian is married to another member of the Akers Laboratories staff. His hobby is gardening.

V.I.P. Treatment

An unusual cargo for a transatlantic air liner, and one that entailed quite a few headaches for the I.C.I. (New York) staff, was a parcel of aphids destined for Jealott's Hill Research Station.

The aphids were collected in southern Arizona, and their transit in warm surroundings was necessary for survival. When the aircraft from Arizona arrived in New York an I.C.I. representative met it and took charge of the parcel to make sure that the insects were placed in a steam-heated



room overnight, rather than in the usual baggage room, to await flight to Britain the next day.

Special arrangements were made with the overseas airline to carry the package as cabin baggage, and the booking was made on a non-stop flight to London.

Precautions also had to be taken for transferring the parcel across the airport area. A heated container normally used for carrying tropical fish was used, and the aphids were transferred only at departure time directly into the London-bound aircraft.

From Jealott's Hill the report is that the aphids arrived safely, and a thriving colony of them has been established.

New Factories in Africa

SOME £13 million is going into two new A.E. & C.I. projects. One is the expansion of nitrogen manufacturing capacity at the Modderfontein dynamite factory near Johannesburg; the other is a fertilizer factory at Rodia near Salisbury in Southern Rhodesia.

At Modderfontein ammonia output will be raised by 1960 from 75,000 tons to 145,000 tons a year. Almost the whole additional output will be converted into 110,000 tons a year of urea. With other local sources of nitrogen this should satisfy the whole of southern Africa's demands for agricultural nitrogen.

The Modderfontein factory is already the biggest commercial explosives factory in the world. It produces more than three million 50 lb. cases of dynamite and 100 million detonators a year. The completed urea plant will be the largest in the world.

The new phosphatic fertilizer plant at Rodia is A.E. & C.I.'s third—the other two are at Umbogintwini near

lene' fibre. It is hoped to start production by 1963-64, and when full production has been achieved a labour force of around 1500 will be needed.

Another Newspaper. May 8th sees the first issue of Wilton's new works newspaper. Like *The Billingham Post* and *Nobel Times*, it is to appear fortnightly.

Second Biazzi Hill. Ardeer's second Biazzi nitroglycerine plant is now in operation. Like the first Biazzi plant, started up in February 1956, it will eventually be completely remote-controlled.

Over 600 gallons of I.C.I.'s 'Pentalite' emulsion paint and 'Dulux' gloss finish were used to redecorate the mosque-like Kuala Lumpur railway station.

Facts about Modder. The new A.E. & C.I. chairman, Mr. H. F. Oppenheimer, recently visited Modderfontein, A.E. & C.I.'s largest factory, for the first time. Modderfontein produces about 80,000 tons of blasting explosive and 172 million detonators a year. The factory property, covering 15 square miles, has a residential population of 6500.

New Deal for Apprentices. A training school for I.C.I.A.N.Z. apprentices is shortly to be established at Deer Park Factory. Initially it will train 14 apprentices a year.

'Terylene' Topics. After wearer trials the Army has chosen 'Terylene' socks for the troops. British Railways Pullman cars are using 'Terylene' tablecloths and napkins on the *Golden Arrow*.

Works Orchestra. Programme for Blackley Orchestra's annual concert included Grieg's Piano Concerto and Beethoven's Fifth Symphony. The orchestra were under their new conductor, Maurice Handford of the Hallé Orchestra. Soloist was Rayson Whalley, also of the Hallé.

NEWS IN BRIEF

Hockey International. The Scotland v. England men's hockey international was played at Grangemouth Recreation Club (Dyestuffs Division) on 26th April.

'Alkathene' Commercials. Plastics Division last month started regular television advertising, mainly with 15 and 30 second stop-motion films directed by Etienne Raik, who last year made the 'Alkathene' Circus film.

Newcastle Extensions. £1 million extensions to the phthalic anhydride plant at I.C.I.A.N.Z.'s Newcastle chemical works are expected to save Australia £500,000 annually in overseas funds. Present capacity of phthalic anhydride, which is used in the making of paints, raincoats, PVC tiles, hoses and plastic curtains, will be more than doubled.

Safety Record. The entire Ardeer factory achieved a record of 1½ million man-hours without lost time injury in March. Ardeer has now gained five 1 million man-hour medallions for its I.C.I. plaque.

Blackley Apprentices Guild. On their own initiative apprentices at Dyestuffs Division's Blackley Works have formed a guild "to arrange regular meetings and to further the interests of apprentices in general."

In the Bag. Unusual use for polythene bags was displayed by C.I.L. employee Joan McGarvie, who broke her leg while ski-ing in the Laurentian Mountains. Back home again, she protected the cast from Montreal's slush and snow with a polythene bag.

A Million Meals. Wilton canteens are now catering at the rate of over one million main meals and about ½ million light snacks a year.

'Terylene' in Ulster. Subject to expected development of the 'Terylene' market, I.C.I. is to establish a unit in Northern Ireland for spinning 'Tery-

Durban on the Natal coast and at Somerset West near Cape Town. The three plants make about 800,000 tons of superphosphate a year. The new plant will produce triple superphosphate as well, adding an equivalent of 160,000 tons a year of single superphosphate to the Company's annual output.

Cornwell Badge Winner

Mr. Arthur Shepherd, Process Foreman in Ammonia Works at Billingham, who has just completed 30 years' service, was 44 years ago the first winner of the Cornwell Badge, which is awarded for conspicuous service in the Boy Scout movement.



Mr. Shepherd

The badge was instituted by the Scout movement in memory of Jack Cornwell who was awarded the Victoria Cross for bravery in action and was killed at sea in the first world war.

Mr. Shepherd was awarded the badge for his efforts on his 15th birthday on 30th October 1914, when the hospital ship *Rohilla* was wrecked at Saltwick Nab, near Whitby.

He was one of a group of Middlesbrough scouts who had volunteered for coast-watching duties at Whitby, and when the ship was wrecked he carried life-saving rockets for coastguards trying to rescue passengers and crew as the ship broke up on the Whitby rocks in a North Sea gale.

The Bug Tower

IN detective fiction, and sometimes in real life, a sniff of prussic acid or a



morsel of potassium cyanide are the last resort of those who wish to cheat the law.

But for one form of life cyanide spells not sudden death but nourishment. Some bacteria thrive on the stuff, and their ability to do so may be of considerable importance in industry.

Industries which use weak cyanide solutions have to take great care that the cyanide is removed from their effluent before it reaches a river or sewer. Even a few parts per million of cyanide in a fishing river wreak havoc among the fish population. Sent down a sewer, the same solution will prevent the sewage filters from working.

* * *

At the Heat Treatment Section of General Chemicals Division's Oldbury Works experiments are going on which may make it easier for customers who use I.C.I.'s cyanide salts in heat treatment processes to "clean up" the weak cyanide solutions they are left with. In a cylindrical tower, now known to everyone as "the bug tower," colonies of the cyanide-eating bacteria have been cultivated on a packing of coke. Cyanide solution is pumped to the top of the tower and discharged at regular intervals over the coke. As the solution flows down the tower the cyanide is removed by the bacteria. The effluent from the bottom of the tower can safely be sent down the sewer.

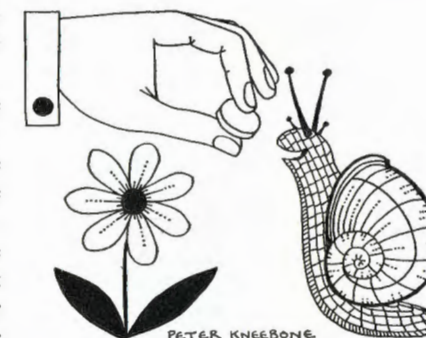
The present method of rendering cyanide solutions harmless is a chemical one, using sodium hypochlorite. The use of bacteria has an obvious advantage: the creatures work 24 hours a day and 365 days a year without incentive or supervision.

Two Aids to Good Gardening

TWO products for the amateur gardener have been added to the Plant Protection range this season—'Solufeed' soluble fertilizer and Slug-End.

'Solufeed' is a quick-acting concentrated fertilizer for top dressing plants, vegetables, greenhouse crops and lawns. It is applied by watering can in solution with water.

The growing of top-quality market produce—including carnations, chry-



santhemums and tomatoes—at the Fernhurst Research Station of Plant Protection Ltd. is based on the regular application of 'Solufeed.' Leading commercial growers have used it over the past ten years to obtain exceptionally high yields of tomatoes.

The price is 3s. 9d. for a ½ lb. tin and 7s. for a 1 lb. tin.

Slug-End is a new bait, in tablet form, for attracting and killing slugs and snails. It costs 2s. for a 75-tablet pack.

Fourteenth-century Witton

APAMPHLET has just been published by the Society for the Protection of Ancient Buildings on the subject of fulling mills—water-driven mills of olden times where woollen cloth was degreased.

Of all unlikely places, the Kynoch Works of Metals Division comes into the picture. Dr. R. A. Pelham, author of the pamphlet, says that the works at Witton near Birmingham can trace their industrial pedigree back in direct line to a fulling mill set up on the banks of the river Tame in the fourteenth century.

£3m. Factory for S.A.I.

SCOTLAND is now consuming nearly three times as much fertilizer as before the war and five times as much lime. Sir Alexander Fleck mentioned this when he opened Scottish Agricultural Industries' new fertilizer works at Leith. He added: "These increases by no means represent the maximum amount of nutrient and lime the farmer could profitably add to Scottish soil."

The new works is on a 19-acre site reclaimed from the Firth of Forth. It

PEOPLE

Mr. George Stephenson, formerly a works chauffeur at Wilton, was the first person to be recruited to the payroll at Severnside.

Mr. F. L. Clark, Research Manager of A.E. & C.I., has been awarded a D.Sc. degree by the University of South Africa—for a thesis which he submitted for a Ph.D. The examiners were so impressed that they awarded the higher degree. Mr. Clark started his career in I.C.I. in 1929 with Alkali Division.

Mr. John Norcross recently became the ninth Avenue Works employee to complete 50 years' service. He has worked in Alkali Division's pipe and valve testing section for the past 32 years.

A pastel portrait of Field Marshal Sir Gerald Templer painted from photographs by **Mr. P. G. Edwards** (Paints Division) has been accepted by Sir Gerald for presentation to the regimental depot of the Royal Irish Fusiliers, of which he is colonel.

Among the Scottish "possibles" for this year's Empire Games at Cardiff who attended a recent two-day training course at Largs was **Ardeer's Isabel Bond**, Scottish women's champion over 100 and 220 yards.

Mr. J. E. Lambert, a member of Billingham Photographic Section, has had a photograph accepted for an international exhibition in Chicago. It is of the interior of the Hydrogen Plant in Gas and Power Works at Billingham and is one of a number selected from several thousand submitted by photographers in this country.

Latest recruit to Manchester United is 21-year-old **Tommy Heron**, a former wages clerk in Ardeer Factory.

Mr. Martin Rosenhead, who works in Plastics Department of Southern Sales Region, has been adopted as prospective Liberal candidate for North Hendon. He is a former president of the Cambridge Union.

Mr. Gordon Taylor, a film projectionist in Central Publicity Department, provided one of the big surprises in the English open table tennis championships when he beat England's No. 1 player, Brian Kennedy. He was later beaten by the Surrey champion, Mike Maclaren, in a closely fought five-game match.

Mr. S. P. Chambers, a Deputy Chairman of I.C.I., has been appointed president of the Combustion Engineering Association for 1958-59.

Apprentice **Eric Oliver** of Bain Works, General Chemicals Division, is to have a trial for the Wolverhampton Wanderers junior team. At present he plays for South Bank juniors.

Two student apprentices from Wilton have won places at the Battersea Polytechnic. They will spend five years there studying for a diploma of technology, equivalent to an honours degree.

Mrs. Beryl Spencer left Blackley Works of Dyestuffs Division in 1953 to be married, and has now returned as a typist to Hexagon House. In the interval she has travelled completely round the world with her husband.

cost £3 million to build and is designed to produce about 150,000 tons of concentrated complete fertilizer a year. The raw materials—phosphate rock, sulphur, muriate of potash and sulphate of ammonia—come into the works from the dockside by conveyor belt. The finished product leaves by rail to be stored in a building constructed on part of the site of the old S.A.I. fertilizer works at Salamander Street, Leith.

S.A.I. is a little short of 30 years old. It was founded in December 1928 by the merging of five old-established companies in association with I.C.I. The company's main business then, as now, was as manufacturers and merchants of fertilizers and feeding-stuffs, but the relative importance of the two products has changed as the consumption of fertilizers has risen. S.A.I. also buy large quantities of

grain from Scottish farms for seed, milling and feeding.

The present chairman is **Mr. W. D. Scott**, who was prevented by illness from attending the ceremony at Leith.

Travelling Scholarships

NEWS of the most valuable travelling scholarship ever awarded in Australia has just been announced by **Mr. J. R. A. Glenn**, Managing Director of I.C.I.A.N.Z.

It will be known as the I.C.I.A.N.Z. Postgraduate Travelling Fellowship. Worth £A1200 a year, it will be tenable for two years. On top of this, I.C.I.A.N.Z. will pay the cost of fares abroad and for return to Australia.

The Fellowship is open to graduates of all Australian and New Zealand universities with high honours in physics, natural sciences or any branch of engineering.

Brainstorming

TWO heads are commonly supposed to be better than one. But does it follow that half a dozen are better than two?

According to the American theory of group creative thinking, otherwise known as brainstorming, it does. The brainstorming technique is briefly this: a group of people are given a problem and are asked to fire off ideas for solving it. The aim is quantity of ideas rather than quality, and the wilder they are the better. Criticism, even self-criticism, while the group is in session is ruled out—remarks such as "Don't be ridiculous" and "It won't work here" are not allowed. If an idea suggested by one member of the group can be built on and improved by the others, so much the better.

The result of the session is supposed to be a mass of ideas, most of them probably quite impracticable but a few of them worthy of closer attention.



Brainstorming began in the American advertising business, but has spread since the war to other businesses. General Motors, Union Carbon and Carbide and General Electric are among the companies reputed to use the technique for solving technical and other problems. It has even spread into government departments.

In this country the approach to it has been gingerly. In I.C.I., under the somewhat daintier title of "imaginative thinking," it has been the subject of some tests by Central Work Study Department and Nobel Division.

These have borne out the contention that a group produces more ideas on any sort of problem than the aggregate of individuals working alone.

What has not yet been proved is whether on all types of problems more

worth-while ideas are produced by this method—whether in fact quantity does breed quality. In some of the experiments few ideas of real value have emerged. In others much better results have been achieved.

* * *

In one problem of a research nature a group in 15 minutes produced approximately 90 ideas. Of these 47 had been examined by research over the past seven years, but three were completely new and worth examining. None of the group knew anything of the problem in advance, and if a brainstorming session had been held when the problem was first considered some fifty worth-while ideas would have been put forward.

The results of the I.C.I. experiments are considered encouraging—encouraging enough for further experiments to be run soon. "Brainstorming isn't the miracle problem-solver of the age,"

said one of the people who took part. "But when ideas are short it may help give a new slant to a problem."

NEW APPOINTMENTS

Some recent appointments in I.C.I. are: **Billingham Division:** Mr. E. I. Perks (Deputy Labour Manager). **Dyestuffs Division:** Mr. J. A. G. Coates (Personnel Director), Dr. J. H. Cruickshank (Development Manager). **Heavy Organic Chemicals:** Mr. H. W. P. Simmonds (Commercial Services Manager). **Leathercloth Division:** Dr. J. S. Gourlay (chairman—in addition to present appointment as Paints Division chairman). **Pharmaceuticals Division:** Mr. R. G. Hoare (a director).

OBITUARY

Dr. A. E. Mitchell

We regret to announce the death on 23rd March of Dr. A. E. Mitchell, chairman of Leathercloth Division. He had been ill for a long time, and only a week before his death a notice was circulated announcing his retirement after 34 years' service.

Dr. Mitchell had a wider service than falls to most I.C.I. people. He had been a research chemist at Billingham in the days of Synthetic Ammonia and Nitrates Ltd.

I.C.I.'S NEW ANAESTHETIC (continued from page 149)

is made from trichloroethylene in three stages; and three separate organisations—Castner-Kellner Works, Rock-savage Works and Widnes Laboratory—are involved.

Meanwhile Pharmaceuticals Division were working on some points of pharmacological interest which had arisen in the early clinical trials and on preparing information for sales representatives and for anaesthetists who were to take part in extended trials. Patent cover was sought in countries all over the world.

About this time 'Fluothane' acquired a second name, Halothane, which was necessary because 'Fluothane' is a registered trade mark of I.C.I., and registered trade marks may not be used in official compilations such as the British Pharmacopoeia. Why not be satisfied with 2-bromo-2-chloro-1:1:1-trifluoroethane? Life is short, and it is rather a mouthful, even for a chemist.

What is the position now after some eighteen months of clinical trials? 'Fluothane' seems undoubtedly to be what we were looking for—a safe, non-inflammable anaesthetic which gives adequate relaxation for most operations. There have moreover been some bonuses in the form of advantages which, although in some cases apparent in the animal trials, could not have been expected at the outset.

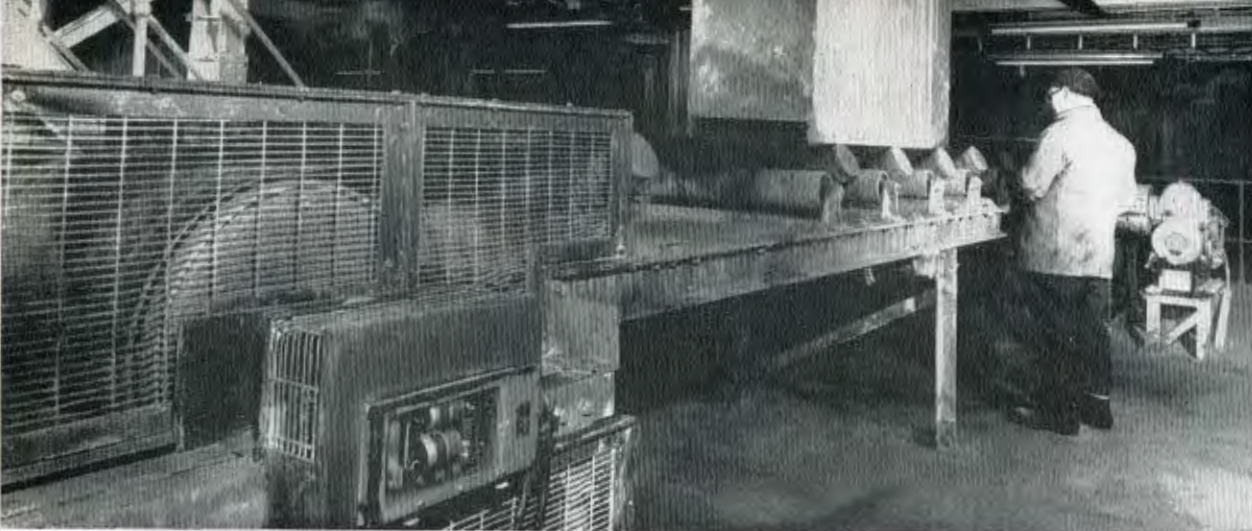
Vomiting and nausea after 'Fluothane' are very infrequent. Oozing of blood from cut surfaces is small, and secretions from the respiratory tract are reduced. A most unusual and valuable property of 'Fluothane' is that it protects the patient from surgical shock. Induction and recovery are rapid and pleasant. The general condition of patients after 'Fluothane' anaesthesia is extremely good. In some cases operations under 'Fluothane' have been successfully completed in patients who were deemed unsuitable for any other form of anaesthesia.

It should be added that there has been some disagreement among anaesthetists over some of the effects of 'Fluothane' and, in particular, over their mechanism. Some of this divergence of opinion can be attributed to difficulties arising from the use of vaporising equipment which gives insufficient control of so powerful an anaesthetic as 'Fluothane' and some to the use with 'Fluothane' of drugs which, although helpful with other anaesthetics, were not suitable with 'Fluothane.'

These points will doubtless be cleared up. Already some excellent equipment, specially designed for administering 'Fluothane,' has been marketed by firms which sell anaesthetic machines. The full assessing of an anaesthetic is a very long job; and the story, at present very encouraging, is far from complete.

What of the future? An anaesthetic must fulfil very varied and exacting requirements. The discovery of a new one is therefore always a very improbable event. The advent of 'Fluothane' can have had little effect on that probability. Nevertheless, work still continues in an effort to find, if not a better, perhaps a cheaper anaesthetic.

The very unusual properties of 'Fluothane' will give rise to much pharmacological research and will increase interest in the biological effects of the 'Arcton' type of compound. It may be that the experience gained with 'Fluothane' will show how the disadvantages of some of the compounds rejected in the screening tests may be overcome and permit their reappraisal. At Widnes Laboratory, in addition to the synthesising of more compounds for screening, work is being done on fundamental problems of narcosis. An expansion of knowledge in the science of anaesthesia is perhaps on the way.



Men with Ideas—4

Roy Parkin

A BILLINGHAM Division man was sitting at home one night watching television. It suddenly occurred to him that the basic principle on which a television tube gives a picture might be applied to a problem at the works.

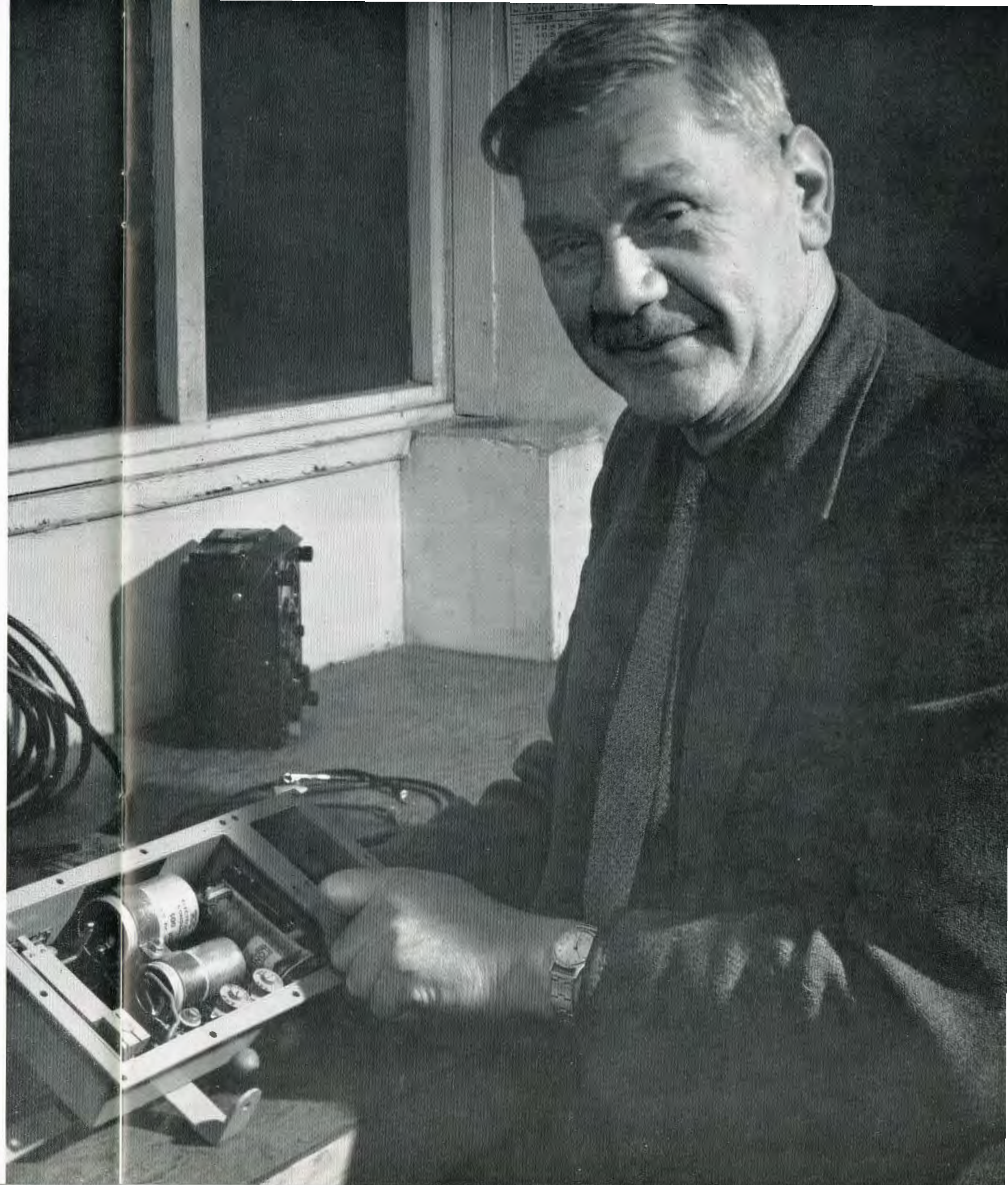
The problem was to find an efficient device to give warning when rotary reaction vessels and driers slowed down or stopped. Not knowing of such failures soon enough sometimes meant lengthy hold-ups on important plant.

Roy Parkin, then an Electrical Foreman and now an Assistant Technical Officer, realised that the charging and discharging of a condenser that give rise to a television picture might be applied to the problem of rotating machines. In this way, though without the complicated electronics of a television tube, his "rotation sensing device" was born.

It operates on the principle that a relay remains energised through an intermittently charged condenser as long as a predetermined speed of shaft is maintained. Any change of speed sets off an alarm, and can make adjustments to related equipment.

The Parkin rotation sensing device provided eventually for Billingham and the rest of I.C.I. something which has proved its worth many times over. The idea was developed by I.C.I. and a firm of electrical manufacturers who are responsible for marketing it—it is also being used now to give warning of difficulties arising on conveyor belts. It has been accepted as standard by all I.C.I. Divisions, and Roy Parkin read a paper on his invention at a meeting of the Association of British Chemical Manufacturers last year.

(Photos : George Birtle)



CHROMATOGRAPHY

By a special correspondent

One of the marvellous things that scientists can do today is to be

able to tell you just what a few drops of a liquid consist of.

The ingenious technique by which this is done is here explained.

WHEN you make a blot of ink on your blotting pad, have you ever noticed that the ring of ink, as it spreads, changes colour, so that you have a dark blue inner blob and a brownish circle outside it? It doesn't happen with all inks, but where the ink is composed of a mixture of two markedly different pigments it does—and in this simple phenomenon is illustrated a principle which has revolutionised the work of the analytical chemist in the last decade or so.

For what happens as the blot spreads is that the two different pigments which are mixed together in the ink separate out because they have different rates of absorption in the blotting paper.

Now, one of the biggest problems confronting the analytical chemist has always been that of separating out substances from mixtures. Most methods of separation which are the stock-in-trade of practical chemists, like distillation (depending on the fact that different liquids boil at different temperatures, so that when a mixture is heated one component can be made to "boil off" from the other), can only be carried out effectively when relatively substantial quantities are available. The analytical chemist, however, often has only a few drops of a mixture to analyse.

The fact that substances may be separated out pretty completely by virtue of different rates of absorption on

paper was first exploited by a Russian botanist called Tswett in the early part of the century when he was extracting the colouring matter from plants. He found that if he passed a solution of the colouring matter through a column of powdered chalk, as the liquid passed through the column bands of varied colour tended to separate in a sharply defined manner along the column. The bands could then be washed separately off the column with solvent. He gave this curious phenomenon the name chromatography, or "colour writing." The facts he discovered were noted, but few people appeared interested at the time.

The story now moves forward some forty years. In 1941 two men, A. J. P. Martin and R. L. M. Synge, both later Fellows of the Royal Society and Nobel prizewinners, returned to the study of Tswett's work. And they had a very bright idea. They thought that it might be possible to improve Tswett's crude chromatography by first dissolving the substance to be analysed in one liquid and then passing this liquid through a solid porous column wetted by a second liquid. The essential thing was, of course, to choose two liquids that did not dissolve in each other, for example oil and water. They found that this method was in many cases much more effective.

Ten years later there was another jump forward when

A. J. P. Martin and A. T. James experimented with a second bright idea. This was to pass through the porous column not a liquid but a gas: in other words, to use a gas as carrier of the substance to be analysed rather than a liquid. Better separations were hoped for and were in fact soon obtained.

During this period of fruitful invention, two other important aspects of chromatography were developed. These were (a) better methods of detection of the bands of separated substances and (b) better methods of recording this information. Electronic methods were roped in for both these purposes. Through a device called a katharometer, changes in the composition of carrier gas as it emerges from the porous column are now measured electrically, which means accurately and just as they occur.

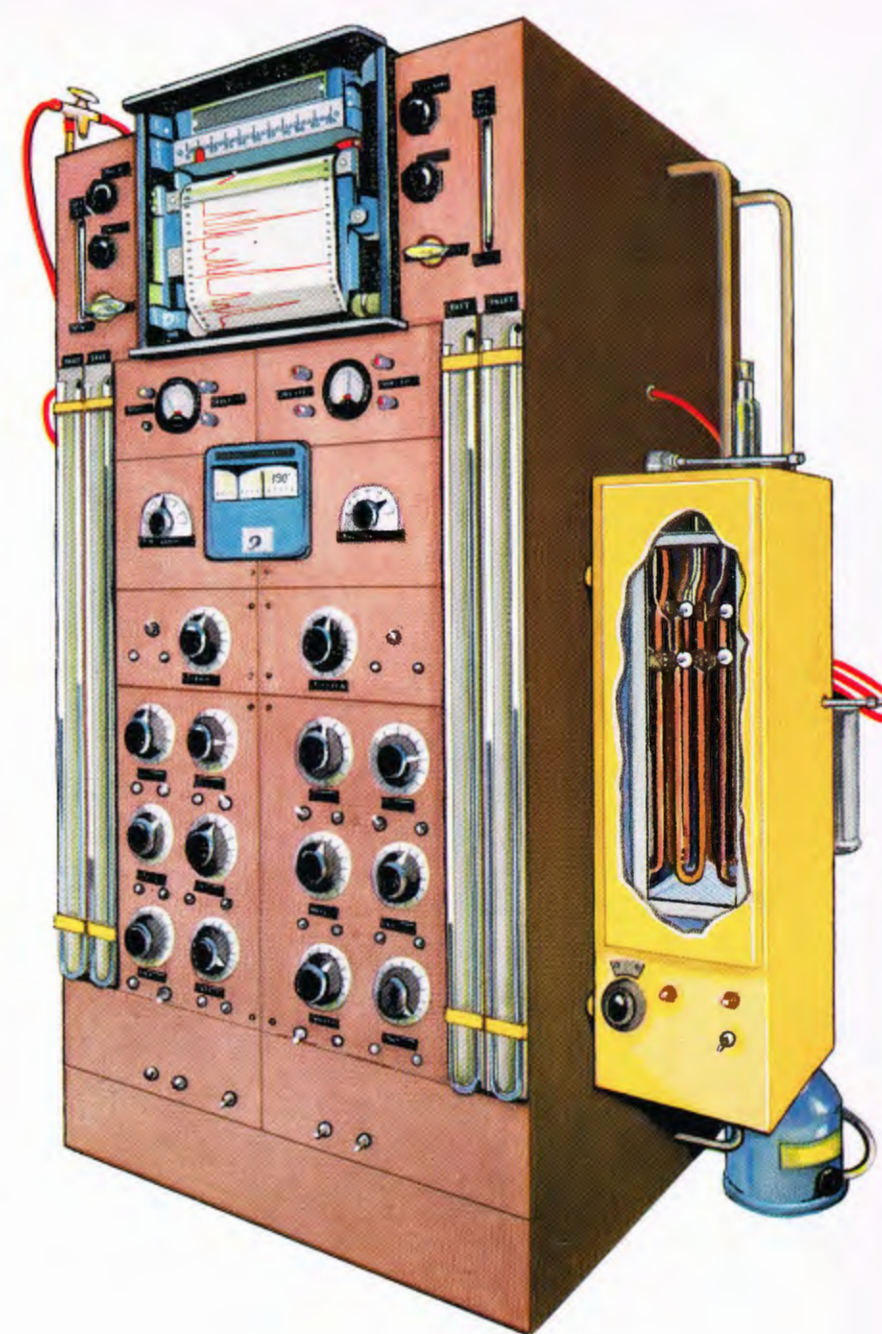
The principle behind the katharometer is that these changes show up as differences in the resistance of an electric filament recorded on a band of paper much in the manner that a barometer records changes of atmospheric pressure. As the carrier gas comes out at the bottom of the porous column (through which it is drawn by suction pump) it will carry with it first one component of the substance being analysed and then another. In fact, the components are no longer mixed up together but each emerges separately, its place in the order of march being determined by its affinity for absorption in the column.

Strung out one behind the other, each component in turn will have a different effect on the electric filament, and each effect can be in turn identified as a particular substance, because every substance will reveal itself by the shape of its own tell-tale chart on the recorder. This will be recognised by the expert much in the same way as a Scotland Yard expert will identify a criminal from his finger-prints.

Several I.C.I. people played a part in these developments, and in particular the work of N. H. Ray at Winnington, and B. W. Bradford, D. Harvey and D. E. Chalkley at Billingham deserves mention.

Now let us look more closely at our illustration of the gas-liquid chromatographer.

The yellow cabinet on the right houses the porous column which is filled with ground firebrick soaked in a special liquid that vaporises at around 400° C. This high boiling point is important, since it enables the carrier gas, usually nitrogen, to be circulated very hot without any danger of the liquid in the column being vaporised and thus drawn into circulation by the vacuum pump. When therefore the substance to be analysed is introduced into



the carrier gas by a hypodermic syringe, it quickly vaporises.

To the left of the yellow cabinet is the electric control system, designed to operate six chromatographers if need be. The pressure gauges recording the vacuum in the porous column flank both sides of the panel, in the centre of which are the dials that control such factors as the heat of the liquid and the heat of the carrier gas. At the top is the device which records the analysis.

What is the future of the gas-liquid chromatographer? There are some who believe that it may prove to be more than just an analysis tool, and that perhaps one day it will be a means of preparing pure organic substances on a comparatively large scale.

Going by Train

By P. C. Allen

To the real enthusiast a journey by train spells romance and excitement. And the harder the seats and the squarer the wheels the better he likes it.

MY Uncle Percy, whose memory is honoured at one of I.C.I.'s Merseyside factories for his unique command of strong language and by a works locomotive bearing his name, was one of those lucky or imaginative people who were always having strange adventures, and several of these happened in trains.

I can remember as a child listening spellbound to his story of the dangerous-looking madman who suddenly gave him a large blank sheet of paper in the train, shouting in a voice that brooked no refusal: "Now read me the news!"—which, needless to say, my uncle did, passing from the report of Parliament under Sir Henry Campbell Bannerman's administration to the foreign news with the latest activities of the German Emperor and the speculation that he was behind the unrest in the Balkans, and ending with a graphic description of the big stand at Old Trafford the day before between Tyldesley and Mr. Spooner.

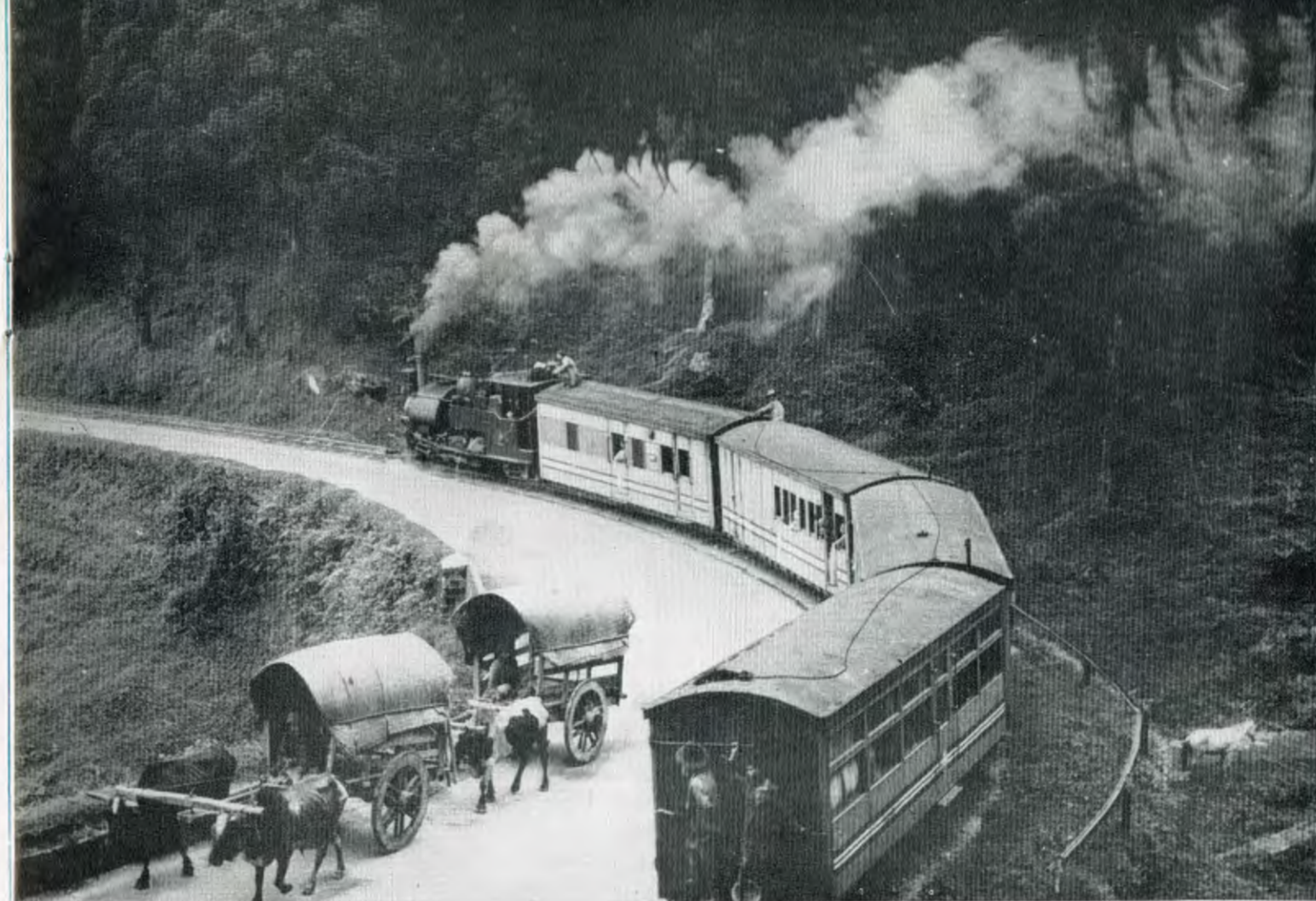
Then there was the occasion when my uncle was reading a French newspaper in the train from Sheffield, which prompted his two companions to plan out loud how they would go through his pockets, with violence if necessary, in the Woodhead Tunnel, at which he quietly folded his paper and got out at Penistone.

I'm sorry to say that no such adventures as these, real or imaginary, have ever happened to me in trains, or indeed in aeroplanes or anywhere else. Nevertheless, train travel has been a source of pleasure to me for many years, and if possible I always choose it in preference to any other way to go if time and the circumstances allow.

There is something magnificent about the great named trains of the world which almost invests them with as much personality as a ship. Almost, but not quite; for a ship is an individual thing, with a strong personality, so that sister ships often differ as much in behaviour as do real sisters, whereas a great train such as the "Flying Scotsman" or the "Queen of Scots" Pullman, or more still the great long-distance trains of North America, must in fact be two or more trains, up to as many in fact as eight, to give a daily service in each direction. Their names, too, have a fine ring: "The Rome Express," "The Orient Express," "The Blue Train," "The Chief," "The Spirit of Progress," "The Twentieth Century Limited," "The Congressional," "The Rheingold Express," "La Freccia del Sud," and a hundred others.

To see the great Canadian trains standing ready in Montreal for the long haul right across the Continent to Vancouver, nearly as far off as London, with their huge gleaming coaches polished and shining, with the Pullman porters in their white coats and képis waiting by their little footstools to help you in, while at the head of the train a great diesel is idling, waiting for the conductor to give the characteristic transatlantic call "All aboard!" on a rising note when the second of departure has come, is for me an occasion of real romance.

I had the good fortune in 1953 to go all the way from Montreal to Vancouver by the "Dominion" express, taking four nights and three days on the journey, and enjoyed every minute of it. Each of the three days is interesting and entirely different, the first across the wild rocky wastes of Northern Ontario all bush and



Climbing up to the summit on the Darjeeling Railway

(Photo: Fox)

scrub and lakeland, the second day across the prairies with their great rolling wheatfields stretching to the horizon like the sea and at every station tall grain elevators visible for miles like ships. The third day is the most spectacular of all, for then the train goes through the Rocky Mountains, surely the most tremendous railway journey in the world.

That day we had the luck to have a footplate pass to ride the diesel locomotive from Banff to Field over the Great Divide, where the waters part to flow eventually to the Atlantic or the Pacific, the most spectacular part of a most spectacular journey. Here from the locomotive you could see the wild beasts running from the train, coyotes and deer and sometimes a bear, while the fireman, with no fires to tend, would look out for the colour-light signals, calling out "Green board!" when the way was shown clear, to which the engineer at the controls would reply "Clear track!"

Now the Canadian transcontinental services have been speeded up, and a new series of trains like "The

Canadian" with its stainless steel cars and "vistadomes" for observing the scenery have set new standards, and wonderfully comfortable they are.

Riding the footplate of a steam engine is a highly specialised form of railway travel and, if the truth be told, not quite as simple as you might suppose, for it is rough beyond imagination, the engine kicking and heaving and jumping under your feet, so that above about 50 m.p.h. you have to hang on to something for dear life, even if—as nearly always—the courteous fireman gives you his seat. And while you are clinging to the window-frame to avoid hurtling about and making an ass of yourself, you look at the driver and fireman and notice that they are going as quietly and easily about their job as if they were driving a lift, the driver calmly on his seat watching for signals and the fireman swinging like a golf professional and shooting his coal just where he wants it in the big firebox without spilling a lump or making a useless movement.

Watching the skill of the men on the footplate is



(Photo: Canadian Pacific Railway)

C.P.R. "The Canadian" near Field, B.C., with "vistadome" in Beaver tail

to realise how truly the Iron Horse has something in common with the horse itself in that the skilful can get response and performance which the ignorant cannot, so that real personal art survives—unlike the diesel or the electric engine, it seems to me, where all you apparently have to do is just to open a valve or push a lever. Yes; in spite of some discomfort, it is a big thrill to hear and feel from the footplate a big engine at work.

I remember especially my first ride on an engine by night, returning after one of our own Central Council meetings one year, as we roared through the warm summer night, the green signal lights welcoming us on at the stations as we swayed over the points and cross-overs. Yes; and a thrill too was a ride down from Edmonton on the C.P.R., and another one in Australia

on which I saw a kangaroo as we were blasting up the famous Cowan bank from the Hawkesbury River.

I must say that I would dearly love a footplate pass for the "Bristolian," which is today the crack express of Britain. This glistening, handsome train, which now wears the old pre-nationalisation colours of Brunel's Great Western Railway, does the 118 miles to Bristol at an average of 67 m.p.h. and may on occasion work up to 100 m.p.h. on the job. I certainly timed a mile in 37 seconds once on this train, which is 97 m.p.h., and when I met the famous French expert Baron Vuillet last summer he had done a level "ton" on the footplate that very day on the "Bristolian" near Shrivenham.

But there are simpler pleasures than the footplate for the train traveller—that is for any journey longer than the daily ride to the office. The pleasure of quiet contemplation out of the window, even if you know the line pretty well, reading and dozing, travel without anxiety, no feeling seasick, no bracing yourself for take-off and landing. And if the journey be a really long one, there are the pleasures of stretching the legs at the stops, the passing of frontiers if you are abroad, and of dining and wining in the Wagon Restaurant.

So far the longest journey of all, the Trans-Siberian, has not come my way, though before the war this was one of the recognised ways for staff of I.C.I. (China) to travel home, indeed the quickest, I think. I did, however, travel in

1949 from Paris to Istanbul, through the Iron Curtain, which was something of an adventure, occupying five nights and four days, which is the longest journey I can so far record. But other long trips have also been memorable, the "Nord Express" from Ostend to Copenhagen, when the Berlin air lift was on and the sky was full of aircraft, or the "Holland-Scandinavian Express" from the Hook to Stockholm with a three-hour train ferry ride across the Baltic.

There are, however, much more specialised pleasures in train travel which I think can hardly appeal except to madmen like myself who love trains, and these are the journeys by the obscure minor railways, often of narrow gauge, which still survive in so many parts of Europe, and indeed in many other parts of the world. On these you are often confronted with a hard

wooden-seated third class carriage sixty years old on fairly square wheels, which rocks and bumps over the flimsy track behind some ancient wheezy steam locomotive at mercifully a very modest speed.

Often these journeys are timed to suit the market needs of farming people living buried in the country, who are notoriously early risers, and so more than once I have had to get up in what seemed to be the middle of the night and go without breakfast to make such a trip. But there are compensations; one's fellow travellers are usually kindly and friendly, even if they are sometimes accompanied by livestock—an ass has been seen among the baggage in County Donegal—conversation flows, and food and drink are often shared (great Spanish omelets in loaves of bread are perhaps the most substantial of all railway food), stops are frequent and people come and go. Out of the window there are strange things to see, for we are usually in deep country, and I can recall seeing the corn being threshed in Yugoslavia by teams of three horses pulling a sledge, on which stood the driver, round and round the threshing floor, and once I remember a farmer lovingly washing a cow with a scrubbing brush in a stream in the back country of Asturias.

For the railway amateur, then, these little lines are the most amusing and inviting of all, with their peculiar rolling stock, locomotives which seldom appear in the *Railway Magazine* or *Trains Illustrated*, and so remote from modern diesel traction or metroland. The most remote and obscure line in all the length and breadth of Europe is, I think, the little 2 ft. gauge line in Yugoslavia which runs down to Lake Ohrid near the Albanian border, taking something like fifteen hours for a journey of little over 100 miles, and all this with the most primitive-looking locomotives, with huge top-heavy spark arresters on top of the chimney, which once served a German military railway in the first world war. One of them is illustrated here.

The famous Darjeeling Railway in India, too, up the first slopes of the Roof of the World, is another remarkable little line, quaint, fussy, lively and, in its own way, efficient, in spite of carrying an engine crew of six.

These little lines usually keep on with their old



(Photo: E. E. Smith)

On the 2 ft. gauge Lake Ohrid railway in Yugoslavia



(Photo: E. E. Smith)

On the metre-gauge in Brittany

engines until they fold up entirely, and one seldom sees modern equipment. Alas, some of them have been folding up all too quickly; the narrow gauge in Ireland, for example, is now all but gone, and in France too, once a great narrow-gauge country, they are fading fast, with an honourable exception of a group of lines in Brittany, where the most engaging red engines still perform. Now the charming little Salzkammergut railway in Austria has gone, and even in Spain there have been casualties among the 66 narrow-gauge railways listed in 1954. So with the main line steam engine on the way out everywhere under the encroachment of electrification and the diesel, except perhaps in Germany and behind the Iron Curtain, it is for the enthusiast "later than you think."

History through Medallions

By D. W. Evans

The collector instinct takes people into some very surprising spheres—from stamps to matchbox labels, from antiques to doorknobs and watch movements. And the study of medallions is not the least interesting or the most expensive of these hobbies.

THE collection and study of medallions can provide a fascinating sidelight on history. Some medallion collectors confine their attention to one country, or even one person. Queen Victoria, Lord Nelson and the Napoleonic Wars are all popular subjects. Other collectors may concentrate on medical or engineering themes, or a portrait gallery of eminent people, or people now little remembered. The choice is wide. Personally, I prefer the byways of history.

A short time ago a humble white-metal specimen turned up bearing a portrait of General Tom Thumb. Now this little fellow seems to have faded in our minds today into a hazy story-book figure. No one to whom I showed this medal could say anything definite about him.

A little research prompted by the discovery of the medal showed that Tom Thumb was a very real and remarkable person.

Briefly, the real name of this famous dwarf was Charles Stratton. He was of American nationality and was only 31 in. high. Despite his small size, he was intelligent, possessed a lively and pleasing personality and was not without acting ability.

The great showman P. T. Barnum (of Barnum and Bailey) was quick to exploit these traits. Tom Thumb was brought to England in 1846 and was an immediate success. He appeared at the Egyptian Hall in Piccadilly, where he strutted about in imitation of Napoleon Bonaparte. He drove in a specially designed miniature coach drawn by tiny ponies, and appeared

before Queen Victoria, who presented him with a souvenir of the occasion. Later he appeared in the pantomime *Hop o' my Thumb*.

Another interesting medallion figure is Sir Hans Sloane. The old copper medal dated 1742 reproduced here depicts him as the President of the Royal Society.

Born in Northern Ireland in 1660, Hans Sloane lived a full and useful life. An eminent physician and naturalist, he was created a baronet by George I, being the first physician to attain that title. Later, he was elected President of the College of Physicians and then President of the Royal Society. He retired at 80 and lived on at his home in Chelsea, where the learned continued to congregate, until 93.

It was, however, as a collector with many interests that Sir Hans Sloane made his greatest mark. His collection was valued at £80,000—a huge sum in those days. He bequeathed it to the public—for £20,000. The gold and silver medals alone were worth that amount, and the ores and precious stones had cost £50,000. There were many other sections, including thousands of botanical specimens and a library of 50,000 volumes and 3556 manuscripts.

Parliament agreed to the terms of the bequest, and so the nucleus of the British Museum was acquired.

What about the cost of medallions, and where are they to be got hold of? Prices range from a few shillings to several pounds, depending on condition, size, metal, rarity and fashion. Most coin dealers hold stocks of medallions, as their study is regarded as a branch of numismatics, and advertise them in their catalogues.



TOM THUMB



SIR HANS SLOANE

LIFE IN SOUTH AFRICA

By J. H. W. Lapham

Last year about 500 emigrants a month left Britain for South Africa. Among them was Mr. John Lapham, who flew out to Cape Town last July to start work at A.E. & C.I.'s Somerset West factory in Cape Province. He here gives a new boy's verdict on the South African way of life.

IN July 1957 I set out by plane from London Airport—classification emigrant, destination Somerset West, by way of Cape Town, where I intended to work for African Explosives and Chemical Industries Ltd., the associate company of I.C.I. Having been here six months, my impressions may be of interest to others who may also want to come south.

Before I left England so many people used to say: Why, in view of all the racial problems, choose South Africa? I

like to travel, and the continent of Africa has always fascinated me. What better starting point could there be than South Africa, about which so much controversy rages today? Somerset West is not Africa, however, as one imagines it. Some thirty miles east of Cape Town, it lies between the Hottentot-Holland Mountains and the sea, the factory being next door to the Strand on the sea edge. Everything contributes to a close resemblance to the Mediterranean, for the surrounding scenery, climate, flora and fauna are very similar.

It must be hard to find a more pleasant place to live in than Somerset West. Imagine going after work for a swim in the warm blue Indian Ocean and finding yourself on a sandy beach that stretches for over thirty miles. Table Mountain lies in the distance, and the surrounding mountain slopes are covered with pine forests and vineyards. One can fish from the rocks, go deep sea fishing, play golf, tennis and picnic—all with the knowledge that every day will be of blue skies and hot sun. In fact, just like the travel poster says, except for the four months May to August, when it rains pretty hard.

Living is so easy in South Africa after the austerity of England—taxation less, cheaper luxuries such as cars, petrol, cigarettes and drink. Food, which is the same in

quality and price as in Britain, is augmented by luscious fruits such as paw-paw, sweet potatoes, mealies, water melons and avocado pears; and by light table wines that are much above the quality of French *vin ordinaire*. Clothes are British prices, and only houses and rents seem to be more expensive. Servants, easy to find, are cheap only in the country, but diligence in work and retention of their services is quite another story, as they come and go at will.

There are, of course, disadvantages; climatic—the famous south-easter wind can blow with terrifying force on a lovely summer's day; ants—long columns of them that appear from nowhere and march along walls to nowhere; flies in summer—conversations at work are accompanied by large thwacks as fly-swotters cope with invasions; and bush fires cover the mountainsides in flame and smoke which in turn descend to the valley and cover your house in ash. In January the factory was besieged by a bush fire that threatened the explosives area. All and sundry downed their tools or pens and helped to beat the flames out.

Socially and politically, South Africa is a complex being. Perhaps journalism in an attempt to impress seeks trouble and forgets the other side of the story.

Here in the Cape the atmosphere is less strained and more liberal than in the north. Somerset West itself is so full of English people that it can be truly dubbed the last outpost of the British Empire in South Africa. But nearby are the strongholds of Afrikaanerdom—Stellenbosch and Paarl.

Afrikaans is the language of South Africa—everywhere it is spoken, and it has to be learned whether one feels it is of value or not.

Antagonism between the English and Afrikaans is supposed to be strong, but I have met many Afrikaans people with whom I converse in English, and I have only encountered courtesy and interest in Britain. Politics are as fascinating to the Afrikaaner as sport is to the Englishman, but if you use tact and retain an open mind you will



On the road to Stellenbosch. A typical stretch of the narrow, very fertile coastal plain around Somerset West flanked on one side by the Hottentot-Holland mountains and on the other by the warm blue waters of the Indian Ocean.



Somerset West has been dubbed the last outpost of the British Empire in South Africa. The strong British influence shows clearly in this cottage style home. The lower slopes of the mountains are covered with pine forests and vineyards.

always be welcome and argument will not be forced on you.

The political situation of White v. Black has been written about all too often. The only comment I want to make is that the basic problems of South Africa, and for that matter of all Africa, are not the creation of any living white man but his unhappy heritage. His actions to safeguard his future must be judged in that light. Sometimes it is hard to recognise in the singing and smiling faces of the natives and coloureds the "oppressed" people of South Africa. The Coon Carnival in Cape Town at the New Year is a gay, noisy and colourful occasion of parades, competitions, singing and dancing. Troupes of bands resembling Dixie players, whose music is founded on the American minstrels, take part, and each troupe tries to outdo the other in the colour and lavishness of its costumes made in secrecy many months before.

Perhaps a woman cannot go out alone at night; perhaps it is necessary to have a watchdog. But sitting under the stars at a braaivleis (barbecue) or on the beach in the sun one forgets politics, racial problems and any feelings of insecurity. There are things one misses—the atmosphere and vitality of England, its culture, restaurants and night life. But then you have to be in London to enjoy these things. Here I enjoy the sun.

I.C.I.'s RESULTS FOR 1957

Since most members of the Company are now shareholders they will already be aware of the results of last year's trading, of the increase in dividends and of the "one for two" scrip issue through receipt of the Company's Annual Report and the Review for 1957. But for the benefit of those who are not shareholders the profit and loss account and balance sheet of the Group for 1957 are reproduced below.

GROUP PROFIT AND LOSS ACCOUNT OF IMPERIAL CHEMICAL INDUSTRIES LIMITED AND 90 SUBSIDIARIES FOR THE YEAR ENDED 31st DECEMBER 1957

(1956 figures cover ICI Ltd. and 91 subsidiaries)

1956 £		£												
435,318,680	SALES to External Customers	462,887,826												
53,445,008	MANUFACTURING and TRADING PROFITS less LOSSES after charging the items inset below	61,515,178												
	<table> <tr> <th>1956 £</th><th></th><th>£</th></tr> <tr> <td>23,459,049</td><td>Depreciation</td><td>24,484,572</td></tr> <tr> <td>7,106,298</td><td>Contributions to Pension Funds, Pensions and Gratuities (Note 1)</td><td>7,217,698</td></tr> <tr> <td>108,847</td><td>Audit Fees and Expenses</td><td>111,194</td></tr> </table>	1956 £		£	23,459,049	Depreciation	24,484,572	7,106,298	Contributions to Pension Funds, Pensions and Gratuities (Note 1)	7,217,698	108,847	Audit Fees and Expenses	111,194	
1956 £		£												
23,459,049	Depreciation	24,484,572												
7,106,298	Contributions to Pension Funds, Pensions and Gratuities (Note 1)	7,217,698												
108,847	Audit Fees and Expenses	111,194												
2,621,523	Revenue from Associated Companies	3,000,594												
304,630	Revenue from Marketable Investments and other Securities	376,455												
378,551	Interest and Miscellaneous Income	607,686												
56,749,712		65,499,913												
2,957,883	Less: Debenture and Fixed Loan Interest	4,764,563												
523,747	Other Loan Interest	641,760												
3,481,630		5,406,323												
53,268,082	Less: Provision in respect of Employees' Profit-Sharing Scheme	60,093,590												
3,146,643		4,958,294												
50,121,439	INCOME BEFORE TAXATION	55,135,296												
23,764,834	Less: Taxation provided on the basis set out in Note 2	26,328,078												
£26,356,605	INCOME OF THE GROUP FOR THE YEAR AFTER TAXATION	£28,807,218												
	RETAINED IN THE BUSINESS													
1,055,449	By Subsidiaries													
4,878,598	Applicable to Minority Members	785,838												
10,098,898	Applicable to Imperial Chemical Industries Ltd.	4,692,552												
16,032,945	By Imperial Chemical Industries Ltd.	11,220,584												
		16,698,974												
	NET DIVIDENDS PAID AND PROVIDED													
1,129,419	By Subsidiaries to Minority Members	1,187,034												
9,194,241	By Imperial Chemical Industries Ltd. to its Members	10,921,210												
10,323,660		12,108,244												
£26,356,605		£28,807,218												

GROUP BALANCE SHEET OF IMPERIAL CHEMICAL INDUSTRIES LIMITED AND 90 SUBSIDIARIES AT 31st DECEMBER 1957

(1956 figures cover ICI Ltd. and 91 subsidiaries)

1956 £	ASSETS, Less CURRENT LIABILITIES	£	£
467,419,761	FIXED ASSETS		
108,633,988	Property, Plant and Equipment	527,807,200	
358,785,773	Less: Depreciation and amounts written off	129,547,972	
16,585,954	Net Book Value (Note 3)	398,259,228	
375,371,727	Goodwill, Patents, Trade Marks, etc. at cost less amounts written off	16,878,537	415,137,765
16,768,366	INTERESTS IN ASSOCIATED COMPANIES (Note 5)		19,080,327
115,230,073	CURRENT ASSETS		
68,744,239	Stocks at or under cost	122,469,810	
4,799,398	Debtors, including Housing and other Loans (Note 6)	74,535,310	
3,100,000	Marketable Investments (Market value £7,857,472)	7,671,024	
7,072,526	Tax Reserve Certificates	4,400,000	
198,946,236	Cash at Bankers and in hand	12,310,911	
46,716,241		221,387,055	
50,123,672	Less: CURRENT LIABILITIES		
3,306,638	Creditors	50,752,899	
11,543,497	Provisions for Taxation and other Liabilities	49,575,072	
111,690,048	Bank Overdrafts: Secured	3,734,547	
87,256,188	Bank Overdrafts: Unsecured	6,323,976	
£479,396,281		110,386,494	111,000,561
			£545,218,653
	FINANCED AS FOLLOWS:		
	CAPITAL AND RESERVES OF MEMBERS OF IMPERIAL CHEMICAL INDUSTRIES LIMITED		
£	Capital	£	£
33,708,773	5% Cumulative Preference Stock	33,708,773	
143,045,436	Ordinary Stock	144,233,090	
176,754,209			177,941,863
121,847,086	Reserves employed in the business (Note 7)		
64,617,670	Capital	128,314,665	
186,464,756	Revenue	71,434,321	
363,218,965		199,748,986	
21,199,962			377,690,849
13,254,208	CAPITAL AND RESERVES APPLICABLE TO MINORITY MEMBERS OF SUBSIDIARIES		23,196,189
11,178,474	FUTURE UNITED KINGDOM INCOME TAX		
24,432,682	Reserve for estimated liability 1958/59	14,016,666	
18,629,623	Reserve for deferred liability due to initial allowances	12,953,336	
51,915,049			26,970,002
70,544,672	DEBENTURES AND LOANS		
£479,396,281	Debentures and Secured Loans	25,541,068	
	Unsecured Loans	91,820,545	
			117,361,613
			£545,218,653

J. H. COTTON, Treasurer.

S. P. CHAMBERS }
P. T. MENZIES } Directors.

PICTURES FROM OVERSEAS



Belgium. "Chemical man," an 18 ft. high glass figure, being erected on the I.C.I. stand at the Brussels Exhibition site early last month. The Exhibition was opened on 17th April by King Baudouin. Panels and portraits around the stand tell the story of the rise of the chemical industry in Britain, and other models feature 'Terylene' and 'Alkathene'



Australia. A staff photographer of the "Melbourne Herald-Sun" was suspended 300 ft. up from a crane to get a picture (left) of the new I.C.I.A.N.Z. headquarters building. Many miles of structural steel have gone into the framework of the skyscraper. In the lower part are the frames for some of the 3 acres of glass which will be used on the building



Australia. Among the seventy-eight I.C.I.A.N.Z. veterans who received long service awards in March were three 40-year men, Messrs. McIntyre, Ashdown and Anderson, pictured above with Mr. J. R. A. Glenn (extreme left), who presented the awards, and Mr. A.N.Z. chairman (extreme right), who himself qualified for a 30-year award K. G. Begg, I.C.I.



Brazil. A recent photograph received from the Oxford and Cambridge expedition to South America showing 'Terylene' ropes in use. Tarpaulins are also of 'Terylene'; the neoprene and natural rubber coating is fluorescent to aid spotting from the air

NEWS IN PICTURES



First Aid Finals—1. Sir Alexander Fleck presents the I.C.I. First Aid Trophy to the captain of the Randle Works (G.C.D.) team, Mr. W. R. Gartland. The Randle team gained 253 out of a possible 400 marks. Runners-up 3 points behind were Akers Research Laboratories, and Alkali Division's team from Winnington Works came third with 242



First Aid Finals—2. The Randle Works team competing in the team test. The examiner was Dr. H. L. Glyn Hughes, president of the Casualties Union, the organisation which supplies the voluntary victims for the tests

First Aid Finals—3. Taking part in one of the individual tests. The casualty was a woman cyclist who had fallen off her bicycle and had a fractured collar-bone and a bad leg haemorrhage



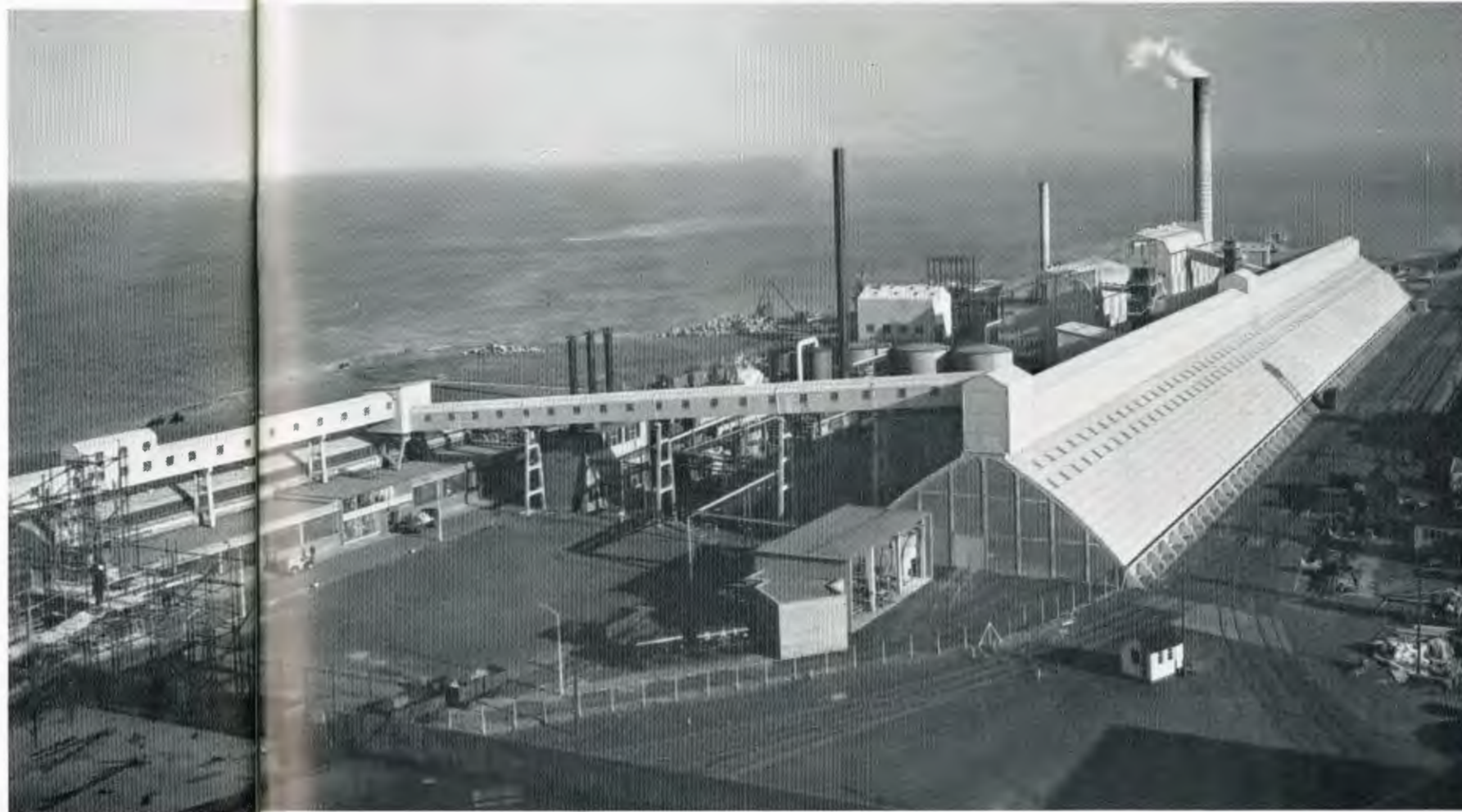
Apprentice School now 500 strong. This picture of welding apprentices under instruction in Billingham's Apprentice School is taken from I.C.I.'s Annual Review, sent to all stockholders. At the present time there are more than 500 apprentices serving 14 crafts in the Billingham factory. Left to right: D. L. Painter, D. R. Robson, E. T. Darnell, W. Curry (instructor) and E. J. Nixon



Maiden voyage. Ardeer model engineer Mr. Phil Atkinson (at the controls) launches his new $\frac{3}{4}$ in. scale Q class loco on a series of trial runs on the Ardeer Recreation Club's outdoor track. It pulls half a ton



New S.A.I. fertilizer works. Sir Alexander Fleck officially opened Scottish Agricultural Industries' recently completed £3 million fertilizer works at Leith on 17th March. Above: Sir Alexander speaking after lunching in the works canteen. On his right is Mr. E. P. Hudson (S.A.I. managing director); on his left Sir Alexander Glen (Secretary of Department of Agriculture for Scotland). Right: General view of the works, which took just over three years to build. Dominating the site is the 900 ft. long warehouse building, which has a storage capacity for some 50,000 tons of fertilizer raw materials



Holiday trip. First man in Alkali Division to take his 50 year service gift in the form of a holiday was Mr. P. Lynskey, seen above receiving ship berth tickets, spending money and brochures for a holiday in Ireland



Exercise "Lion." An all-I.C.I. Civil Defence exercise is being held at Metals Division Headquarters on 17th May. Nearly all Divisions will take part. Our picture shows some of the organisers plotting the exercise on a scale model of the Witton site



Two-tonner. This ingot of I.C.I. titanium, weighing nearly two tons and worth £4000, is the largest ever produced in this country. The operator, Mr. E. C. Floyd, is stamping the ingot with identification marks



Lord Mayor at Hexagon House. The Lord Mayor of Manchester, Alderman Leslie Lever, M.P., and the Lady Mayoress inspect the display of objects made from isocyanate flexible foams during their recent tour of Dyestuffs Division headquarters



Mr. Arthur Agar, one-time cooper at Gatebeck Factory and now a searcher in Labour and Welfare Department at Ardeer, who recently completed 50 years' service



Mr. James Henderson, assistant works engineer at Castner-Kellner Works, has been elected chairman of the Runcorn U.D.C. This is the fourth year running that an employee of the works has held this office



Mr. W. Jackson (Billingham Division), who as chairman of the Tees-side branch of the Dunkirk Veterans Association was a member of the guard of honour for the Royal premiere of the film "Dunkirk"



Dr. M. A. T. Rogers, who has succeeded Mr. R. M. Winter as I.C.I. Research Controller. Dr. Rogers joined Dyestuffs Division in 1934 and recently has been head of the Division's Academic Relations Department



Mr. J. H. Townsend, the new I.C.I. Sales Controller. He succeeds Mr. E. M. Fraser. Mr. Townsend was formerly Deputy Sales Controller



Mr. John Whalley, 29-year-old instrument fitter at Salt Division's Weston Point Works, who recently rescued a 3-year-old child from drowning in the Bridgewater Canal



The seven Belgian girls picked to act as interpreters on the I.C.I. stand at the Brussels World Fair spent a week in England undergoing an intensive I.C.I. indoctrination course. Between them they speak seven languages, including Russian. Above: Photographed on the main staircase at Warren House, Kingston. The carpet is part of the Westminster Abbey coronation carpet



Plastics in lighting. 'Perspex' railway platform lights for the new station serving Gatwick Airport were among exhibits at a recent exhibition held by Plastics Division to show the part plastics play in contemporary light fittings. 25% of I.C.I.'s annual 'Perspex' sales in this country goes into street lighting and interior light fittings

"Dear Boss . . ."

By Sadie Blunt

Illustrated by Martin Aitchison

DEAR BOSS, The stork has fluttered its wings around my unsuspecting head, and so this morning I placed in your "In" tray a cold little note called a formal resignation. Apart from telling you that I was leaving your employ (which you knew anyway), it did not say a thing—and there is so much to say. This moment of parting is also the moment for confession.

First, I am not half as bright as you think I am. For five years you have been mystified by the fact that I usually knew what you were going to do before you told me, but it was not an advanced form of telepathy. It was the colour of your pants.

There was that dark, clerical, sombre grey pair. I called them your undertaker pants—they would have looked so right at a funeral, and so would the expression you wore with them. You reserved both for the visits or visiting of V.I.P.s. On those occasions I felt I ought to crawl into your room on my stomach and exit backwards on my knees. Usually I kept out of your way until you assumed human form once more.

Then there were the blue Harris tweed ones, smelling of heather and a friendly pipe. When you walked in in those you oozed love of your fellow men and I knew you were going to slip out of the office at four-thirty sharp surrounded by an aura of innocence, always betrayed by the niblick sticking out of the boot of your car.

But the ones I liked best were the old, balloon-kneed, navy-blue pin-striped pants. On the days you wore those you had no visits to make, no visitors to greet, and I could even get you to investigate the depths of your "In" tray—a gala occasion for both of us. When we had finished ridding your desk of its clutter, the office had a clean, sterilised look about it. People would pop their heads round the door, decide

you were on holiday, and retire to make their own decisions.

Your flagrant disregard for organisation and method was something I never did understand. You would wallow in a cloud of procrastination for a week and then decide at three o'clock on Friday afternoon that you really must get this lot cleared before the weekend. Then followed a solid spell of dictation and a ruthless beating for my typewriter, and at five to six I would limp weakly into your room with a bulging letter book and a thick head.

And your dictation! Did you know that your dictation is superb? Words flow from your lips with a steady, unhesitant rhythm like the hum of a hive of happy bees. The pity of it all is that it sent me to sleep. I could feel myself dropping off in the comfort of your carpeted room. I would wriggle my bottom discreetly on that hard leather chair. A good secretary must never fidget, so when that failed I would dig a high heel into my foot. This self-inflicted agony invigorated me for a good sixty seconds, then I began to be submerged again. Even the tickle of the ladder I had started as it ascended my nylon was of no avail. I would cling desperately to consciousness by thinking of things which fill me with horror, like earwigs and income tax, but it was a losing battle.

Just in time you would come to the end of your outstanding correspondence and I would crawl to my room. There I would do a few physical jerks. As a chronic sufferer from the occupational disease known as Typist's Rear, the spectacle of me trying to touch my toes while shrouded in a tightly tailored skirt was one of the brighter moments in the Admin block.

On confessing my dilemma to the other girls they generously offered to take it in turns to creep up

outside your door during dictation periods and drop a bunch of tin cans at ten-minute intervals. The hysterical screams of hilarity which came from my table during lunch were due to the varied opinions on what your reactions to this might have been. Exhausted by mirth and indigestion, we finally abandoned the idea.

Among my most treasured reminiscences will be that of office tea. This ritual took place twice daily in my office. The first stage was to find out "how many," and with the communicating door between our offices tightly closed there was only one way to do this—listen at the keyhole. Long experience taught me to gauge quite accurately how many visitors you had by the murmuring coming from the other side. Of course, it had its perils. One day you opened the door suddenly and my ear became tangled with the door knob. I straightened up, eyes watering with pain, and you looked at me gravely and said I ought to get glasses because you thought I was suffering from eyestrain.

On uneventful days I would carry into your office the assessed number of cups of tea required, accompanied by a plate of plain biscuits. You never ate biscuits yourself, but for those who did you decreed plain biscuits. To me these refined, pale beige slabs were "dog biscuits," and I could not imagine anyone wanting to eat them; but visitors did eat them, until one day last year.

When I cleared the cups from your room, the plate of biscuits had been touched—but only just. Somewhat surprised at the unusual self-denial of your guests, I packed the unused biscuits away in the biscuit tin, to be brought out later for the next gaggle of visitors. You remember that week, of course; we had V.I.P.s every day, many from foreign parts, and the plate of biscuits was in and out of your office with monotonous regularity. Each time it returned to me with a mere one or two biscuits missing.

If it had not been for that thieving hound of an office boy, I might never have known the truth. He acquired one of the biscuits on his way to clear my "Out" tray, and it was only after I had lifted him from his knees where he had collapsed, choking, that I learned that the biscuits were soaked in T.C.P.

I shall never know how many overseas orders we lost through the first aid being in the same cupboard as the tea things. Who knows? Perhaps incidents like these gave the foreigner his peculiar ideas about our culinary habits.

The welfare side of my job was as varied as a bowl of cherries and often as colourful.

During my interview for the job you mentioned casually that I was expected to do some staff welfare work and that there was a certain amount of "mothering" required. What you did not tell me was that my family was one of fifty and all girls.

Remember the dear little newlywed you found in tears in my office? I told you she had suffered a bereavement, and I suppose in a way she had. Her husband, a keen gardener, had for weeks been nourishing a marrow with glucose and water until it was a glorious thing like a grounded green zeppelin. It was so beautiful that he had felt sure it would win a prize at the local show, and he had brought it into the kitchen to polish it. She had stuffed and served it for his evening meal. Not only would he not speak to her but he would not eat the stuffed marrow either, and she brought her broken heart to me. I considered the situation well, adopted what I hoped was the expression of a trained Marriage Guidance Counsellor and delivered my opinion.

"Get rid of it!" said I. "Throw it away, and go home tonight and cook him a delicious meal, his favourite dish. He'll soon forget his marrow."

At this she became hysterical. "But stuffed marrow is his favourite dish!" she wailed.

After that, when they brought their marriage problems to me, I gave them two codeine tablets and the address of the nearest Citizens Advice Bureau.

Christmas had its own special hazards in a job like mine, and one of these was Biggleswade. I am not certain whether the annual salary revision announced just before the holidays did something to his ego or whether he got that spring feeling a little early, but Biggleswade, the quiet retiring Biggleswade, suddenly shed his inhibitions and became a menace. Loud squeals in the corridors, quiet titters in the corners, and Biggleswade was at the bottom of them all. With supreme faith in the defensive tactics of the average teenager I usually ignored the not-too-serious appeals for help, but last Christmas the juniors filed into my office with the request that I do something about Mr. Biggleswade.

I could, of course, have descended upon him with an outraged air, but he is such a nice little man normally that I should have hated to hurt his feelings, and so I decided to use the diplomatic approach—and that was where I went wrong. I tracked him down as he approached the stationery cupboard with a leer where a pay clerk



"One day you opened the door suddenly . . ."

stood, unsuspecting, with her back turned to him.

"Mr. Biggleswade," said I, tapping him gently on the shoulder. To my horror he turned the leer on me, and in a second we were locked in a passionate embrace. It was at this moment that you rounded the corner with the Division chairman. I tried to kick Biggleswade but could not move, and all I could do was gaze helplessly at you out of the corner of one eye. The Division chairman looked faintly amused, you looked astounded, and Biggleswade was unconcernedly having the time of his life.

I expected to be court-martialled and reduced in rank, but instead when I had to face you, you greeted me with a broad smile and said how pleased you were to see the spirit of co-operation active in all members of the staff, and I gathered from your attitude that you thought I had unplumbed emotional depths behind my starched white collar.

How many happy memories I carry with me in my retirement! The sound of your voice is one—a gentle and caressing whisper when dictating a strange name and the roar of an angry bull when I said I could

not hear you. Your wonderful circle of friends with queer-sounding names—Dear Bud, Dear Barney, Dear Winkle and Dear Bessie (I was surprised to see that when Bessie visited you he was six feet four and at least eighteen stone), and last but not least your business lunches. The scent of expensive cigars would float through to my office and I would sit back and sniff the delicious aroma. No one enjoyed your cigars more than I.

On Friday week the staff will slink into your office one by one, each trying to hide behind another, thereby making themselves more conspicuous than ever, and wondering why they should suddenly feel uncomfortable in front of people with whom they rub shoulders each day. Most uncomfortable of them all will be me, to whom, I am told, you are going to present a parting gift. Your

eloquence will paint a portrait of someone who might have been me if I had been perfect, completely ignoring the fact that I am known to be practically mentally defective before 10 a.m., forgetting too that I once had the president of the Frisking Corporation racing round the country on the wrong day for a luncheon date at a restaurant which did not exist.

Everyone will smile benignly, clap politely, and wish they could get back to their work because otherwise they will have to work late. There will be Gloucester-Ryde, who always insists that his work is more important than anyone else's and gets away with it because he has a pair of beautiful brown eyes; Higgins with the enormous capacity for tea and beer; and little Dolly Cardington of the beautiful face and the empty head—a nice crowd.

It seems a long time since I first walked through the sacred portals of I.C.I. to join them all, armed only with a Pitman's certificate and my teacher's recommendation that I was "a girl of gentle personality." Ah, well; a commercial life changed all that—but I have survived.



"Coffee"

Photo by Ivor Ashmore